

Appendix to Agricultural Land Conservation as An Important Part of California's Climate Strategy

TABLE 1

Calculation of Statewide Greenhouse Gas Emissions Avoided by Reducing Agricultural Land Conversion by 50% by 2030 and 75% by 2050

Year	Projected Acres Converted Current Trend	Goal for Acres Converted in Year X *	Acres Avoided Conversion in Year X	Cumulative Acres Avoided Conversion			Statewide GHG Avoided in Year X (t CO2e)		
				Total	Cropland #	Rangeland #	From Cropland	From Rangeland	Total
2015	41,700	41,700	0						
2016	41,700	40,310	1,390	1,390	1,029	361	34,191	12,110	46,301
2017	41,700	38,920	2,780	4,170	3,086	1,084	102,572	36,330	138,902
2018	41,700	37,530	4,170	8,340	6,172	2,168	205,144	72,660	277,804
2019	41,700	36,140	5,560	13,900	10,286	3,614	341,907	121,099	463,007
2020	41,700	34,750	6,950	20,850	15,429	5,421	512,861	181,649	694,510
2021	41,700	33,360	8,340	29,190	21,601	7,589	718,005	254,309	972,314
2022	41,700	31,970	9,730	38,920	28,801	10,119	957,340	339,078	1,296,418
2023	41,700	30,580	11,120	50,040	37,030	13,010	1,230,866	435,958	1,666,824
2024	41,700	29,190	12,510	62,550	46,287	16,263	1,538,582	544,947	2,083,529
2025	41,700	27,800	13,900	76,450	56,573	19,877	1,880,489	666,047	2,546,536
2026	41,700	26,410	15,290	91,740	67,888	23,852	2,256,587	799,256	3,055,843
2027	41,700	25,020	16,680	108,420	80,231	28,189	2,666,875	944,576	3,611,451
2028	41,700	23,630	18,070	126,490	93,603	32,887	3,111,355	1,102,005	4,213,360
2029	41,700	22,240	19,460	145,950	108,003	37,947	3,590,025	1,271,544	4,861,569
2030	41,700	20,850	20,850	166,800	123,432	43,368	4,102,885	1,453,193	5,556,079
2031	41,700	20,329	21,371	188,171	139,247	48,925	4,628,568	1,639,384	6,267,951
2032	41,700	19,808	21,893	210,064	155,447	54,617	5,167,071	1,830,115	6,997,186
2033	41,700	19,286	22,414	232,478	172,033	60,444	5,718,396	2,025,388	7,743,784
2034	41,700	18,765	22,935	255,413	189,005	66,407	6,282,543	2,225,202	8,507,745
2035	41,700	18,244	23,456	278,869	206,363	72,506	6,859,511	2,429,557	9,289,069
2036	41,700	17,723	23,978	302,846	224,106	78,740	7,449,301	2,638,454	10,087,755
2037	41,700	17,201	24,499	327,345	242,235	85,110	8,051,913	2,851,892	10,903,804
2038	41,700	16,680	25,020	352,365	260,750	91,615	8,667,345	3,069,871	11,737,216
2039	41,700	16,159	25,541	377,906	279,651	98,256	9,295,600	3,292,391	12,587,990
2040	41,700	15,638	26,063	403,969	298,937	105,032	9,936,675	3,519,452	13,456,128
2041	41,700	15,116	26,584	430,553	318,609	111,944	10,590,573	3,751,055	14,341,628
2042	41,700	14,595	27,105	457,658	338,667	118,991	11,257,292	3,987,199	15,244,490
2043	41,700	14,074	27,626	485,284	359,110	126,174	11,936,832	4,227,884	16,164,716
2044	41,700	13,553	28,148	513,431	379,939	133,492	12,629,194	4,473,110	17,102,304
2045	41,700	13,031	28,669	542,100	401,154	140,946	13,334,377	4,722,878	18,057,255
2046	41,700	12,510	29,190	571,290	422,755	148,535	14,052,382	4,977,187	19,029,569
2047	41,700	11,989	29,711	601,001	444,741	156,260	14,783,209	5,236,037	20,019,245
2048	41,700	11,468	30,233	631,234	467,113	164,121	15,526,857	5,499,428	21,026,285
2049	41,700	10,946	30,754	661,988	489,871	172,117	16,283,326	5,767,360	22,050,687
2050	41,700	10,425	31,275	693,263	513,014	180,248	17,052,617	6,039,834	23,092,451
Cum Totals	1,459,500	766,238	693,263	9,462,425	7,002,195	2,460,231	232,753,268	82,438,437	315,191,705

* Assumes annual rate of conversion reduced by 50% by 2030 and by 75% by 2050. Baseline is 41,700 annual average 1984-2010. See Table 4.

Assumes historic average ratio (74/26) of cropland to rangeland conversion 1984-2010 (FMMP)

Assumes a net savings of 55% of the difference between agricultural and urban emissions as a result of concentrating population on fewer acres.

Urban and agricultural emissions from Jackson (2012) See Table 2. Percentage determined by using RapidFire model of Calthrope Analytics based on a land use mix of 10% urban infill and 90% compact urban-suburban as an alternative to development at the average statewide urban-suburban density. See Table 3.